APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,653	12/22/2003	Juan-Antonio Carballo	AUS920030892US1(4021)	7580

45557   7590   09/29/2006

IBM CORPORATION (JSS)
C/O SCHUBERT OSTERRIEDER & NICKELSON PLLC
6013 CANNON MOUNTAIN DRIVE, S14
AUSTIN, TX 78749

EXAMINER
NGUYEN, DUC M

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *12/22/03*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1.   The references listed in the information disclosure statements submitted on

12/22/03 has been considered by the examiner (see attached PTO-1449).

Specification

2.   The disclosure is objected to because of the following informalities:

The numbering of claims is not in accordance with 37 CFR 1.126 which requires

the original numbering of the claims to be preserved throughout the prosecution. When

claims are canceled, the remaining claims must not be renumbered. When new claims

are presented, they must be numbered consecutively beginning with the number next

following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 11-23 have been renumbered to 12-24.

Appropriate correction is required.

Claim Rejections - 35 USC ϶ 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application filed in the United States
only if the international application designated the United States and was published under Article 21(2)
of such treaty in the English language.

4.   Claims **1, 3, 6, 10** are rejected under 35 U.S.C. 102(e) as being anticipated by

Mills (US Pat. Number **6,795,450**).

Regarding claims **1, Mills** discloses a variable power link, comprising:

a link circuit (212, 214) to process data having multiple different data

transmission characteristics, the link circuit being configurable to operate in multiple

power modes (full power mode and low power mode), wherein at least two of the

multiple power modes are associated with respective data transmission characteristics

(see Fig. 8 and col. 9, lines 55 – col. 10, line 58); and

a local controller (801, 802) to receive activity assignments for the variable power

link, wherein the activity assignments are related to data transmission characteristics,

and to configure the link circuit to operate in one of the multiple power modes in

respective response to a received activity assignment (see Fig. 8 and col. 9, lines 55 –

col. 10, line 58).

Regarding claim **3, Mills** would disclose the variable power link comprises a

receiver core (inherent component), the link circuit being a clock and data recovery

loop, wherein an ability of the clock and data recovery loop to track changes in a phase

of the data transmission is related to the multiple power modes of the clock and data

recovery loop (see col. 23, lines 5-46)

Regarding claim **6,** the claim is rejected for the same reason as set forth in claim 1 above. In addition, **Mills** would disclose the link circuit comprises a gain and equalization circuit being configurable to reduce distortion and to compensate for attenuation based upon a medium associated with the channel (see col. 6, lines 22-34).

Regarding claim **10, Mills** would disclose the local controller comprises interpretation logic to select the link circuit and to determine the power mode for the link circuit based upon the activity assignment (see col. 28, line 65 – col. 29, line 30).

5.   Claims **1-4, 10, 12-14, 16** are rejected under 35 U.S.C. 102(a) as being anticipated by **Fung** (US **2003/0196126**).

Regarding claim **1, Fung** discloses a variable power link, comprising:

a link circuit to process data having multiple different data transmission characteristics, the link circuit being configurable to operate in multiple power modes 1, wherein at least two of the multiple power modes are associated with respective data transmission characteristics (see Figs. 9-10 and [0099]); and

a local controller to receive activity assignments for the variable power link, wherein the activity assignments are related to data transmission characteristics, and to configure the link circuit to operate in one of the multiple power modes in respective response to a received activity assignment (see Figs. 9-10 and [0097]-[0099], see also [0195]-[0197]).

Regarding claim **2, Fung** would disclose a global controller to determine the activity assignment for the variable power link based upon a routing table, the activity

assignment being related to a transmission frequency for the data transmission (see [0086] and [0156]).

Regarding claim **3, Fung** would disclose the variable power link comprises a receiver core (inherent component), the link circuit being a clock and data recovery loop, wherein an ability of the clock and data recovery loop to track changes in a phase of the data transmission is related to the multiple power modes of the clock and data recovery loop (see Fig. 10 and [0104], [0107] and [0110 – 0111] regarding "suspend/resume" which would read on "data recovery").

Regarding claim **4, Fung** would disclose a transmitter core (inherent component), the link circuit being a **serialization** circuit that is configurable to adjust a frequency of the data transmission (see Fig. 11 and [0081], [0223], [0224]).

Regarding claim **10, Fung** would disclose the local controller comprises interpretation logic to select the link circuit and to determine the power mode for the link circuit based upon the activity assignment as claimed (see [095], [0105]).

Regarding claim **12**, the claim is interpreted and rejected for the same reason as set forth in claim 2 above.

Regarding claim **13, Fung** would disclose a local controller, responsive to the control signal, to configure the circuitry associated with the link to operate in the power mode, wherein selection of the power mode is based upon the activity (see [0107], [0156]).

Regarding claim **14, Fung** would disclose the local controller comprises part of a receiver and is designed to adjust power consumption by the link by selecting the power

mode based upon the activity, wherein the power mode maintains data throughput (see [0107], [0156]).

Regarding claim **16, Fung** would disclose the local controller is adapted to change an operating frequency and an operating voltage for the circuitry based upon the power mode (see [0107], [0156]).

6.   Claims **18, 20** are rejected under 35 U.S.C. 102(e) as being anticipated by **Bui** (US **7,047,428**).

Regarding claims **18, Bui** discloses a method for reducing power consumption by a link, the method comprising:

determining an activity for the link based upon forwarding logic, the activity being related to a characteristic for a data transmission via a channel of the link (see Figs. 3-4 and col. 7, line 54 – cl. 8, line 56) ;

associating the activity with a power mode for the link, wherein the power mode is related to the characteristic (see Figs. 3-4 and col. 7, line 54 – cl. 8, line 56); and

configuring circuitry associated with the link to operate in the power mode to process the data transmission (see Figs. 3-4 and col. 7, line 54 – col. 8, line 56).

Regarding claim **20**, the claim is rejected for the same reason as set forth in claim 18 above. In addition, **Bui** discloses the determining that the link is inactive (see col. 8, lines 10-15).

Claim Rejections - 35 USC ɔ 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims **6, 8-9, 19, 22** are rejected under 35 U.S.C. 103(a) as being unpatentable

by **Bui**.

Regarding claim **19**, the claim is rejected for the same reason as set forth in

claim 18 above. In addition, it is clear that by utilizing different medium for different

communication speed (see col. 4, line 62 – col. 5, line 3), **Bui** would obviously disclose

selecting a medium for the channel as claimed (i.e, 10 Megabits/sec for copper media

and 1 Gigabits/sec for optic media).

Regarding claim **22**, the claim is rejected for the same reason as set forth in

claim 18 above. In addition, it is clear that when reconfiguration the circuit in sleep

mode, the configuring would comprise substituting a clock and data recovery loop

with a less complex, clock and data recovery loop associated with a lower power

consumption (see Bui, col. 8, lines 17-64).

Regarding claim **6**, the claim is rejected for the same reason as set forth in claim

18 above. In addition, it is clear that **Bui** would obviously disclose a local controller and

the link circuit comprises a gain and equalization circuit being configurable to reduce

distortion and to compensate for attenuation based upon a medium associated with the

channel (see Fig. 3 and col. 6, lines 12-26), in order to reconfigure the IC circuit to operate in a low power (sleep) mode.

Regarding claim **8**, the claim is rejected for the same reason as set forth in claim 6 above. In addition, it is clear that by utilizing different medium (copper cable and fiber optic) for different communication speed (see col. 4, line 62 – col. 5, line 3), **Bui** would obviously disclose reconfigures the link circuit for a change between fiber optic and copper media for the channel as claimed (i.e, 10 Megabits/sec for copper media and 1 Gigabits/sec for optic media).

Regarding claim **9**, the claim is rejected for the same reason as set forth in claim 8 above. In addition, since the copper cable and fiber optic links would have different length, by changing the link circuit for a change between fiber optic and copper media for the channel, **Bui** would obviously disclose reconfigures the link circuit for a change between long and short media for the channel as claimed.

9.   Claims **7, 11, 22** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Mills**.

Regarding claim **7**, the claim is rejected for the same reason as set forth in claim 6 above. In addition, since **Mills** discloses the attenuation is a function of cable length and its frequency (see col. 6, lines 26-30), it is clear that Mills would obviously disclose the activity assignment indicates a length associated with the medium as claimed, as part of setting parameters by the auto-negotiation process for LSPMode parameters (see col. 24, lines 32-43).

Regarding claim **11**, the claim is rejected for the same reason as set forth in claim 10 above. In addition, it is clear that the interpretation logic would obviously comprise a table to associate the power mode with a data frequency, in order to select a data frequency in low power mode (see col. 22, lines 6-18).

Regarding claim **22**, the claim is interpreted and rejected for the same reason as set forth in claim 1 above. In addition, it is clear that when reconfiguration the circuit in low power mode, the configuring would comprise substituting a clock and data recovery loop with a less complex, clock and data recovery loop associated with a lower power consumption (see **Mills**, col. 22, lines 19-65), for making LSP detection easier.

10.   Claims **5, 11, 15, 17** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Fung.**

Regarding claim **5,** since **Fung** teaches the reconfiguration of a node for the power consumption is based on quality of service (QOS) and load (see [0042]), and since QOS is varied with transmission power (see [0155, 0156]), it is clear that **Fung** would obviously disclose circuitry that is configurable to adjust amplification of the data transmission, in order to adjust transmission power according to a quality of service level.

Regarding claim **11**, the claim is rejected for the same reason as set forth in claim 10 above. In addition, it is clear that the interpretation logic would obviously

comprise a table to associate the power mode with a data frequency, in order to select a

data frequency in low power mode (see [0107, 0128]).

Regarding claim **15**, since the quality of service depends on the transmission

power (or gain) and equalization parameters, it is clear that **Fung** would obviously

disclose the local controller comprises part of a transmitter, the transmitter being

adapted to deactivate a gain and equalization stage based upon the activity, in order to

adjust transmission power according to a quality of service level (see [0155, 0156]).

Regarding claim **17**, the claim is rejected for the same reason as set forth in

claim 12 above. In addition, **Fung** would obviously disclose the global controller is

designed to communicate a routing decision of router for a port of the link to the local

controller to adjust power consumption by the circuitry according to the activity (see

[0086]). By doing so, it is clear that the routing decision (power management messages)

would obviously determine a data frequency (see [0099]), a traffic type, and a medium

type (serial channel or ethernet channel) for transmission of the data (see [0091]), in

order to adjust power consumption by the circuitry according to the activity.

11.   Claims **21, 23-24** are rejected under 35 U.S.C. 103(a) as being unpatentable by

Bui in view of **Fung** (US Patent Number **2,233,183**).

Regarding claim **21**, the claim is rejected for the same reason as set forth in

claim 18 above. In addition, since maximum frequency typically requires maximum

voltage (i.e, full power mode, see Fung, [0128]), it is clear that when reconfiguration the

circuit in sleep mode, a reduced transmission frequency would be selected by the auto-negotiation function (see Bui, col. 6, line 53 – col. 7, line 40).

Regarding claim **23**, the claim is rejected for the same reason as set forth in claim 22 above. In addition, it is clear that when reconfiguration the circuit in sleep mode or Wake on mode, the configuring would comprise reducing a bias of a gain circuit (see Bui, col. 6, lines 12-26), in order to reduce the transmission power during inactivity period.

Regarding claim **24**, the claim is rejected for the same reason as set forth in claim 22 above. In addition, since maximum frequency typically requires maximum voltage (i.e, full power mode, see Fung, [0128]), it is clear that when reconfiguration the circuit in sleep mode, the configuring would comprise reducing a frequency of a serialization circuit .

Conclusion

12.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 20040153507A1   to Zeitler et al,

US006732190B1   to Williams et al,

US006366143B1   to Liu et al,

US 20040253924A1   to Acampora,

US 20050138441A1   to Huffman et al,

US006894602B2   to Browning,

US 20050177755A1 to Fung,

US006735448B1   to Krishnamurthy et al,

US007002949B2   to Garcia-Luna_Aceves et al

13.   **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

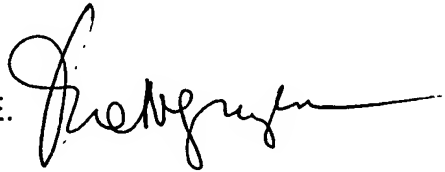(571) 273-8300 (for **formal** communications intended for entry)

(571)-273-7893 (for informal or **draft** communications).

Hand-delivered responses should be brought to Customer Service Window,

Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry concerning this communication or communications from the examiner

should be directed to Duc M. Nguyen whose telephone number is (571) 272-7893,

Monday-Thursday (9:00 AM - 5:00 PM).

Or to Matthew Anderson (Supervisor) whose telephone number is (571) 272-

4177.

Duc M. Nguyen, P.E.

Sept 19, 2006